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54631  
111,095

PATENT



SPECIFICATION

Convention Date (France), Oct. 16, 1916.

Application Date (in the United Kingdom), Aug. 25, 1917. No. 12,229/17.

Complete not accepted.

### COMPLETE SPECIFICATION.

#### Improvements in or relating to Explosion Engines.

I, JULES LOUIS DIDIER, of 26, Parc de Montretout, Saint-Cloud, France, Engineer, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

- 5 This invention relates to improvements in the construction of cylinders for explosion engines, and more particularly in very light engines. In the cylinders of such engines, it has been already suggested to use a cover of light metal, preferably of aluminium, which enclosed a cast iron or steel inner wall in which the piston slides. The object of this invention is to provide a head of light metal, such as for instance aluminium. The invention consists mainly in inserting, between the upper part of the cylinder and the head, a cast iron or steel plate provided with perforations and seats for the valves, and having the necessary mechanical strength. The aluminium head mounted immediately above, is provided with bores for the valve guides, and it also forms a support for the rockers and the cam shaft. A cap fixed to the top of the said head is easily removable in order to allow of examination of the valve parts.

The accompanying drawings show, by way of example, a construction according to the invention.

- 20 Figure 1 is a vertical section of the upper part of an engine provided with the invention.

Figure 2 shows the invention applied to an engine with an ordinary cylinder, the cover of which is secured for example, by autogenous welding to the inner wall of the cylinder.

- In the said figures, the outer cover, preferably of light metal, is marked 1, the inner steel or cast iron wall 2, with its upper part surrounding the end of the cover 1 throughout the whole of its circumference. A steel or cast iron plate 3 is inserted between the upper part of the inner wall 2 and the head 4, so that the latter can be made of light metal of small strength, such as for instance aluminium. The plate 3 has the necessary perforations 5 forming a seat for the valve 6 which is guided in a bush 7 mounted in a bore 8 of the head 4. The upper part of the head 4 supports the cam shaft 9 and the spindles of the rockers 10. The head can be secured to the cylinder by means of screw threaded rods 11 riveted to the inner wall 2 of the cylinder and held by nuts 12.

[Price 6d.]

The upper part of the head 4 is covered with an easily detachable cap 13 in order that examination of the distributing parts may be made. In the modified construction shown in Figure 2, the cover 1 is secured by autogenous welding, or in any other suitable manner, to an ordinary cylinder.

Obviously the invention is not limited to the construction described and 5 illustrated, but is applicable to any explosion engines, whenever it is desired to use a head of light material, which withstands high strains with difficulty.

[Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that 10 what I claim is:—

1. In an explosion engine the provision between the upper face of the cylinder and the head of a steel or cast iron plate having the necessary mechanical resistance and carrying the seats for the valves, whereby the head of the cylinder may be made of light metal, such as aluminium.

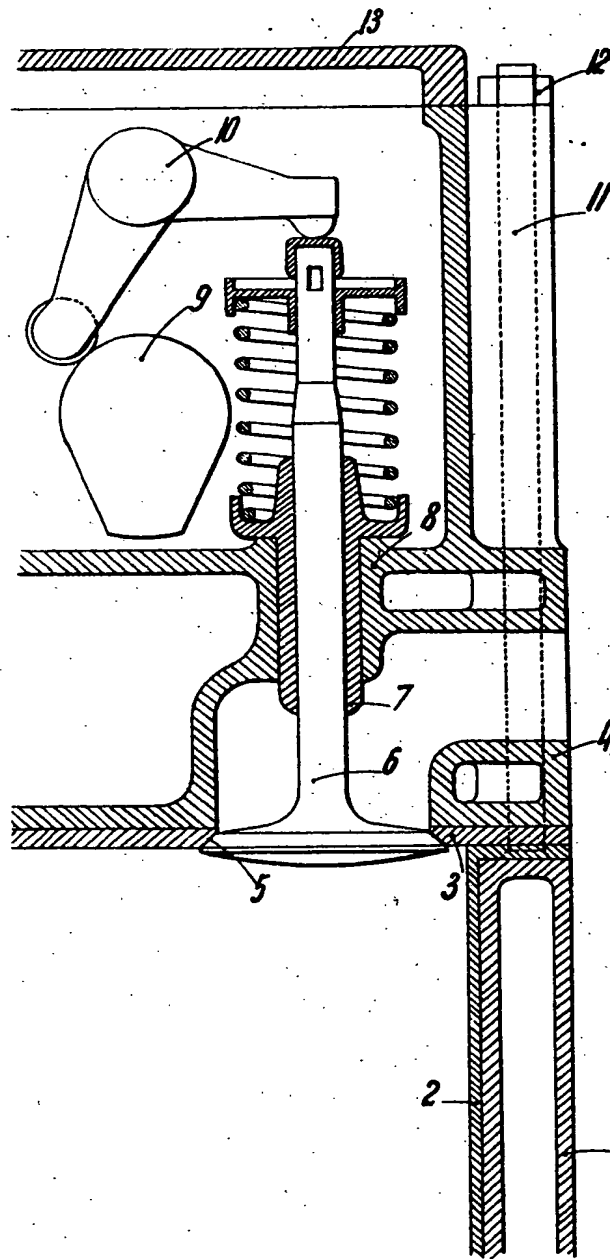
2. The complete cylinder for explosion engines substantially as described or 15 as illustrated in Figure 1 or in Figure 2 of the accompanying drawings.

Dated this 24th day of August, 1917.

BOULT, WADE & TENNANT,  
111 & 112, Hatton Garden, London, E.C. 1,  
Chartered Patent Agents. 20

[This Drawing is a reproduction of the Original on a reduced scale.]

*Fig.1*



*Fig.2*

